

REMARKS

Claims 1-6, 9-11, 14-17, 21, 22 and 32 have been amended to further patentably distinguish the invention from the prior art. Allowable claims 31, 33 and 34 have been rewritten in independent form. Claims 7, 8, 12, 13, 18-20 and 23-30 are allowed.

The objection to the declaration is noted. A new declaration will be filed in due course.

It is said that FIG. 1 should be designated by a legend --Prior Art-- because it is said only that which is old is illustrated. This objection is respectfully traversed.

FIG. 1 illustrates a reflective diffraction grating, where the grating is produced by surface acoustic waves. This illustration is not prior art. Accordingly, withdrawal of the requirement for a proposed drawing correction or corrected drawings is respectfully requested.

Claims 1-6, 9-11, 14-17, 21, 22 and 32 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Inagaki.

Regarding claim 1, the reference is said to disclose a method for spatially modulating radiation, with specific reference to the abstract, FIG. 3, comprising directing at least one radiation beam (column 5, lines 51-53 and column 7, lines 31-41, FIG. 3L) upon at least one surface acoustic wave diffractive element (column 7, lines 33-36, FIG. 3 "38") and driving at least one of said surface acoustic diffractive elements with a plurality of modulating signals (column 7, line 55 - column 8, line 14, FIG. 3, "37") to generate a plurality of independently modulated output radiation beams having parameters (column 7, line 55 - column 8, line 14, FIG. 3, "L1", "L2" and "L3").

Regarding claim 2, the reference is said to further disclose the modulating signals being electrical (column 7, lines 55-56, FIG. 3, "37").

Regarding claim 3, the reference is said to disclose the driving comprising modulating at least one output radiation beam parameter selected from the group consisting of the direction (column 7, lines 36-41, FIG. 3), the amplitude, phase, and frequency of the modulated output radiation beams.

Regarding claim 4, the reference is said to disclose the driving comprising the application of a plurality of separate modulating signals for each surface acoustic wave diffractive element (column 7, lines 55-57).

Regarding claim 5, the reference is said to disclose at least one of the modulating signals being characterized by a plurality of frequencies (column 7, lines 55-57).

Regarding claim 6, the reference is said to disclose a laser directing the radiation beam (column 5, lines 51-53 and column 7, lines 31-41).

Regarding claim 9, the reference is said to disclose the modulated output radiation beams directed upon photosensitive materials (column 9, lines 39-54, FIG. 5, "8").

Regarding claim 10, the reference is said to disclose an apparatus for spatially modulating radiation (Abstract, FIG. 3) comprising at least one surface acoustic wave diffractive element (FIG. 3, "3"), each element said to inherently have a surface, at least one transducer of surface acoustic waves (column 7, line 57, FIG. 3, "33"), a source of a plurality of modulating signals driving the at least one transducer to transduce a surface acoustic wave in the surface of at least one of said surface acoustic wave diffractive elements (column 7, lines 24-30 and line 55 - column 8, line 14, FIG. 3, "37"), a source of at least one input radiation beam constructed and arranged so that at least a portion of the input radiation beam strikes a surface acoustic wave diffractive element from outside the surface of that surface acoustic wave diffractive element (column 7, lines 31-41, FIG. 3, "L"), and a plurality of modulated output radiation beams modulated by respective ones of said modulating signals (column 7, lines 43-59, FIG. 3, "L1", "L2" and "L3").

Regarding claim 11, the reference is said to disclose the source of radiation being a laser (column 7, lines 31-33), which it is said would have inherently have a cavity.

Regarding claim 14, the reference is said to disclose at least one surface acoustic wave diffractive element having an active area (column 7, lines 24-30, FIG. 1, "32").

Regarding claim 15, the reference is said to disclose the active area being piezoelectric (column 6, line 66 - column 7, line 8, FIG. 1, "32").

Regarding claim 16, the active area of the reference it is said would inherently have a reflectivity greater than zero, this being reasonably based upon the reference disclosing the input laser beam being deflected (column 7, lines 31-41).

Regarding claim 17, the active area of the reference it is said would inherently have a transmissivity greater than zero, this being reasonably based upon the indicated piezoelectric materials (column 7, line 7) having well-known transmissive characteristics as well as the reference disclosing the transmitted beam "Lo" (FIG. 3).

Regarding claims 21 and 22, the reference is said to disclose the transducer comprising interdigital electrodes (column 7, lines 9-13, FIG. 3, "33") deposited on top of a piezoelectric substrate (column 6, line 66 - column 7, line 8, FIG. 1, "32") and being regularly spaced (FIG. 3, "33").

Regarding claim 32, the reference is said to disclose wherein said active area comprises at least one thin membrane (column 7, lines 24-30, FIG. 1, "32").

These grounds of rejection are respectfully traversed. We rely on the authorities set forth on pages 10 and 11 of the response mailed September 16, 2002, and the authorities set forth in the second full paragraph on page 14 of the response mailed June 3, 2003.

At least as amended the rejected claims patentably distinguish the invention over the reference. The reference discloses the use of an optical waveguide. There is no disclosure of a reflective diffractive grating in the reference. There is no disclosure of the radiation beam being directed upon the diffractive element. The reference directs the beam into the waveguide. Accordingly, withdrawal of the rejection of claims 1-6, 9-11, 14, 17, 21, 22 and 32 as anticipated by the reference is respectfully requested. If this ground of rejection is repeated, the Examiner is respectfully requested to quote verbatim the language in the reference regarded as disclosing a reflective diffractive grating or disclosing the radiation beam being directed upon the diffractive element as distinguished from directing the beam into the waveguide.

In view of the foregoing amendments, authorities, remarks and the inability of the prior art to anticipate, suggest or make obvious the subject matter as a whole of the invention

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disclosed and claimed in this application, all the claims are submitted to be in a condition for allowance, subject to furnishing the new Declaration.


Should the Examiner believe the application is not in a condition for allowance, the Examiner is respectfully requested to telephone the undersigned attorney at (617) 521-7014 to discuss what additional steps the Examiner believes are necessary to place the application in a condition for allowance.

Enclosed is a \$129.00 check for excess claim fees and a \$475.00 check for the Petition for Extension of Time fee. Please apply any other charges or credits to deposit account 06-1050, Order No. 12325-002001.

Respectfully submitted,

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